Multi-Sensor Towed Array Detection System (MTADS)

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Multi-Sensor Towed Array Detection System (MTADS)

- **Developed by US Naval Research Laboratory (NRL)**
  - **NRL POC - Herb Nelson (202-767-3686)**
  - **Combined MTADS Airborne, Vehicular and Man-Portable Survey at the Badlands Bombing Range (BBR) Impact Area (Draft Report, January 03)**
  - **Funding**
    - **ESTCP – The Environmental Security Technology Certification Program**
    - **AFCEE – New Technology Funds**

History of the Badlands Bombing Range

- **Department of War annexed (1942) – 341,725 acres of the Pine Ridge Reservation**
  - **Since 1960 lands been returning to Oglala Sioux Tribe**
  - **In 1978, all remaining BBR lands were returned except 2,486 acres termed the impact area**
  - **NRL in 1999 NRL conducts MTADS demonstration survey**
  - **2002 AFCEE and Ellsworth Support Demonstration**
    - Clear the Site as clear of UXO
    - Determine if Combined MTADS can be reliable and provide complete coverage of a site

Combined MTADS – Airborne, Vehicular and Man-Portable

- **MTADS Technology Description**
  - **<u>Vehicular Magnetometer System</u>**
    - **Low-Magnetic-Signature Vehicle**
    - **Towed linear array of Magnetometer and Pulsed-Induction Sensors**
    - **Magnetometers are Cesium-Vapor full-field magnetometers**

- **MTADS Technology Description (continued)**
  - **<u>Man-Portable Magnetometer System</u>**
    - **Designed to collect data equivalent to the vehicular system**
    - **Constructed of fiberglass and plastic components with two wheels placed side by side between the sensors**
    - **Weight – 38 lbs**
    - **Operator's backpack (GPS receiver, radio and battery) – 18 lbs**

- **MTADS Technology Description (continued)**
  - **<u>Airborne Magnetometer System</u>**
    - **System mounted on Bell Helicopter Model 206L Series "LongRanger"**
    - **Magnetic Sensors Cs-Vapor (7)**
    - **Data Acquisition Computer mounted in the rear seat**
    - **Survey is monitored continually by operator in the rear seat**
    - **Helicopter Pilot flies the survey using onboard navigation display**
      - Display provides left-right indicators
      - Altitude indicator
      - Real time data display so the operator can fly any missed areas

Combined MTADS – Airborne, Vehicular and Man-Portable

- **MTADS Results**
  - **Survey Costs - $100/acre**
  - **Remediation Costs - $200/target**
- **Traditional Methods are:**
  - **Labor-intensive**
  - **Slow and inefficient**
  - **Estimated seventy (70) percent of total budget of typical effort is spent on digging targets that do not turn out to be UXO**
- **Production**
  - **Man- Portable 2-3 acres/day**
  - **Vehicular 15-25 acres/day, 6 mph**
  - **Airborne – up to 500 acres/day**
  - **Detection Efficiency in excess of 95%**

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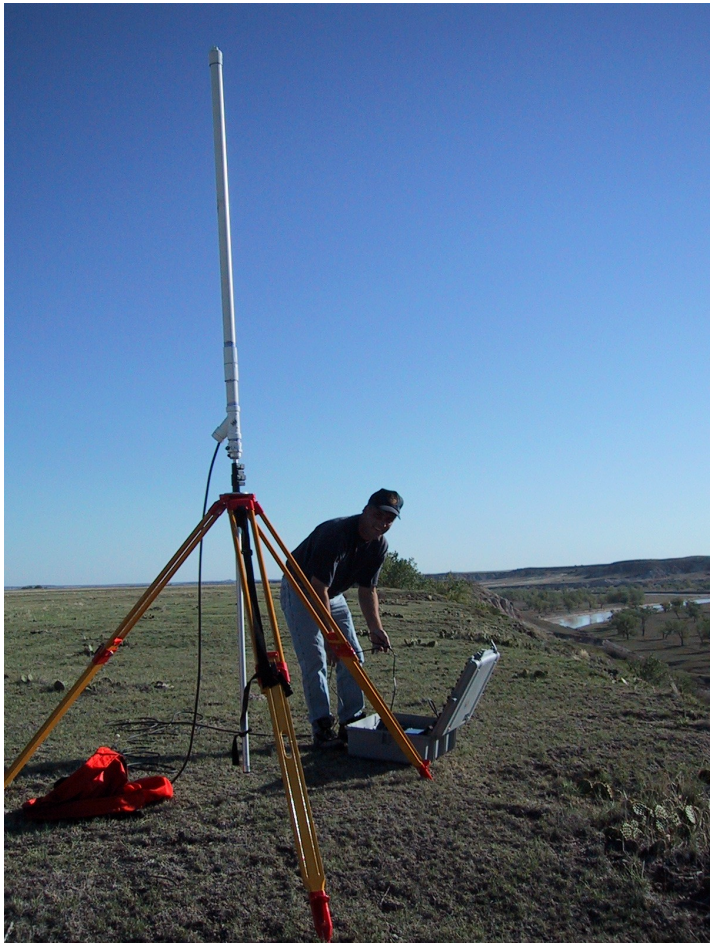

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